AMENDMENTS TO THE SPECIFICATION

Please change the previously amended description of FIG. 5A, FIG. 5B etc. on page 9 to read as shown below:

FIG. 5A, FIG. 5B, FIG. 5C and FIG. ~~5C~~ 5D are block diagrams showing the sequence the present invention used for extracting, aggregating and storing information utilized in system processing from: user input, the process management system database, optionally, the simulation program database; the Internet; an Owner Basic Financial System database, an Owner Advanced Financial System database, an Owner Operations System database, one or more Owner Asset System database(s) and an ~~the~~ Owner Value and Risk System database;

Please change the description of FIG. 8 on page 9 to read as shown below:

FIG. 8 is a block diagram showing the sequence of steps in the present invention used for completing analyses, communicating process feature selection to other systems and displaying, selecting and printing management reports. ~~; and~~

Please change the description of FIG. 9 on page 9 and add a description of FIG. 10 as shown below:

FIG. 9 is a sample report showing the efficient frontier for Organization XYZ, the current position of XYZ relative to the efficient frontier and the forecast of the new position of XYZ relative to the efficient frontier after the process is optimized~~.~~; and

FIG. 10 is a diagram showing the files or tables in the value and risk system database that are utilized for data storage and retrieval during the processing in the system for process management.

Please change the previously amended first paragraph that begins on page 10 to read as shown below:

FIG.1 provides an overview of the processing completed by the innovative system for process management. In accordance with the present invention, an automated method of and system (100) for optimizing risk and return from a process is provided. Processing starts in this system

(100) with a block of software (200) that extracts, aggregates and stores the data and user input required for completing the analysis. This information is extracted via a network (25) from a process management system database (30), optionally, a simulation program database (35), the Internet (40) and an Owner Value and Risk System database (45). There are also ~~optional~~ data extractions from a Owner Basic Financial System database (6), a Owner Advanced Financial System database (7), a Owner Operations System database (8) and one or more Owner Asset System database(s) (9). These information extractions and aggregations are guided by a user (20) through interaction with a user-interface portion of the application software (900) that mediates the display and transmission of all information to the user (20) from the system (100) as well as the receipt of information into the system (100) from the user (20) using a variety of data windows tailored to the specific information being requested or displayed in a manner that is well known. While only one database of each type (30, 35 & 45) is shown in FIG. 1, it is to be understood that the system (100) can extract data from multiple databases of each type via the network (25).

Please change the previously amended second paragraph that begins on page 10 to read as shown below:

All extracted information concerning the process is stored in a file or table (hereinafter, table) within an application database (50) as shown in FIG. 2. The application database (50) contains tables for storing user input, extracted information and system calculations including a system settings table (140), a metadata mapping table (141), a conversion rules table (142), a frame definition table (143), a process management system database table (144), a reports table (145), a process to owner table (146), an operating factors table (147), a simulation program table (148), a bot date table (149), an Owner Value and Risk System table (150), a process value table (151), an external factor forecast table (152), a feature option value table (153), a sensitivity analysis table (154), **a cluster id** ~~an optimal risk profile~~ table (155) and an analysis definition table (156). The ~~application database also optionally~~ value and risk system database (45) has an advanced finance system table (157), a cash flow ~~analysis definition~~ table (158), an asset system table (159), a basic financial system table (160), a derivative table (161), an element/external factor definition table (162), and element variables table (163), an enterprise sentiment table (164), an external database table (165), an xml summary table (166), a factor variables table (167), a financial forecast table (168), a generic risk table (169), an industry ranking table (170), an operation systems table (171), an optimal mix table (172), a real option value table (173), a risk reduction activity/product table (174), a scenarios table (175), a segment definition table (176), a simulations table (177) a statistics table (178) and a vector table (179). The application database (50) can optionally exist as a datamart, data warehouse, departmental warehouse or storage area network. The system of the present invention has the ability to accept and store supplemental or primary data directly from user input, a data warehouse or other electronic files in addition to receiving data from the databases described previously. The system of the present invention also has the ability to complete the necessary calculations without receiving data from one or more of the specified databases. However, in one preferred embodiment all required information is obtained from the specified databases (30, 35 & 45) and the Internet (40).

Please change the paragraph that began on line 7 of page 13 of the specification to read as shown below:

Using the system described above, the risk and return of the process being analyzed will be optimized from the perspective of the process owner. Optimizing the risk and return of a process as outlined previously is completed in three distinct stages. The first stage of processing (block 200 from FIG. 1) extracts, aggregates and stores the data from user input, internal databases (30, 35 or 45) and the internet (40) as shown in FIG. 5A, FIG.5B, FIG 5C and FIG. ~~5B~~ 5D. The second stage of processing (block 300 from FIG. 1) analyzes the extracted data and determines the mix of process features and feature options that maximizes process value while minimizing process risk as shown in FIG. 6A through 6F. The third and final stage of processing (block 400 from FIG. 1) displays the results of the prior calculations, completes special analyses, communicates with other systems and displays detailed graphical reports and optionally prints them as shown in FIG. 8.

Please change the previously amended paragraph that began on line 21 of page 13 of the specification to read as shown below:

The flow diagrams in FIG. 5A, FIG 5B, FIG. 5C and FIG. ~~5B~~ 5D detail the processing that is completed by the portion of the application software (200) that extracts, aggregates and stores the information required for system operation from: a process management system database (30), optionally, a simulation program database (35), the Internet (40), the Owner Basic Financial System database (6), the Owner Advanced Financial System database (7), the Owner

Operations System database (8), one or more Owner Asset System database(s) (9) and ~~an~~ the Owner Value and Risk System database (45) and the user (20). A brief overview of the different databases will be presented before reviewing each step of processing completed by this portion (200) of the application software.

Please change the previously amended paragraph that began on line 1 of page 15 of the specification to read as shown below:

The Owner Value and Risk System database (45) for an enterprise contains the matrix of value, matrix of risk, segment of value models and statistics generated by the system described in the cross referenced application 09/994,720 dated November 28, 2001 and ~~for a multi-enterprise organization it is the matrix of value, matrix of risk and statistics generated by the system detailed~~ in cross-referenced application 09/994,739 dated November 28, 2001. The matrix of value, matrix of risk, segment of value models and statistics used in processing are continually developed using the method detailed in FIG 6C, FIG. 6D, FIG 6E and FIG. 6F.

Please change the previously amended Table 1 on page 15 of the specification to read as shown below:

Table 1

1. Process owner
2. Mode of operation (continuous or batch)
3. Metadata standard
4. Process resource and feature map
5. Location of process management system database and metadata
6. Location of simulation system databases and metadata (optional)
7. Location of external database and metadata
8. Location of Owner Value and Risk System database and metadata ~~(optional)~~
9. Location of Owner basic financial system and metadata ~~(optional)~~
10. Location of Owner advanced financial system and metadata ~~(optional)~~
11. Location of Owner operation system and metadata ~~(optional)~~
12. Location of Owner asset system(s) and metadata ~~(optional)~~
13. Scenario (combined normal, extreme is default)
14. Location of account structure
15. Base currency
16. Risk free cost of capital
17. Risk adjusted cost of capital
18. Management report types (text, graphic, both)
19. Default reports
20. Default missing data procedure

21. Maximum time to wait for user input
22. Maximum number of generations to process without improving fitness
23. Structure of enterprise (segments of value, elements of value etc.)

Please change the paragraph that began on line 7 of page 19 of the specification to read as shown below:

The software in block 224 checks the bot date table (149) and deactivates any simulation program data bots with creation dates before the current system date and retrieves information from the system settings table (140), metadata mapping table (141), the conversion rules table (142) and the frame definition table (143). The software in block 224 then initializes data bots by frame for each field in the metadata mapping table ~~process feature and resource map~~ (141) that mapped to a field in the simulation programs database (35). Bots are independent components of the application that have specific tasks to perform. In the case of data bots, their tasks are to extract and convert data from a specified source and then store it in a specified location. Each data bot initialized by software block 224 will store its data in the simulation programs table (148). Every simulation program data bot contains the information shown in Table 3.

Please change the first paragraph added after line 12 on page 21 of the specification to read as shown below:

The software in block 234 checks the application database (50) to see if the Owner Value and Risk System data are current. If the data are current, then processing advances to a software block 222. If the data are not current, then processing advances to a software block ~~342~~ 241.

Please add the following text at the end of the data extraction and storage section and just before the beginning of the analysis section in the specification:

The software in block 241 checks the bot date table (149) and deactivates any basic financial system data bots with creation dates before the current system date and retrieves information from the system settings table (140), metadata mapping table (141) and conversion rules table (142). The software in block 241 then initializes data bots for each field in the metadata mapping table (141) that mapped to the Owner's Basic Financial System database (6) in accordance with the frequency specified by user (20) in the system settings table (140). Bots are independent components of the application that have specific tasks to perform. In the case of data acquisition bots, their tasks are to extract and convert transaction and descriptive data from a specified source and then store it in a specified location. Each data bot initialized by software block 241 will store its data in the basic financial system table (160) and/or the derivatives table (161). Every data acquisition bot contains the information shown in Table 5A.

Table 5A

1. Unique ID number (based on date, hour, minute, second of creation)
2. The data source location
3. Mapping information
4. Timing of extraction
5. Conversion rules (if any)
6. Storage Location (to allow for tracking of source and destination events)
7. Enterprise
8. Creation date (date, hour, minute, second)

After the software in block 241 initializes all the bots for the Owner's Basic Financial System Database (6), processing advances to a block 242. In block 242, the bots extract and convert transaction and descriptive data from the basic financial system database (6) in accordance with their preprogrammed instructions in accordance with the frequency specified by user (20) in the system settings table (140). As each bot extracts and converts data from the basic financial system database (6), processing advances to a software block 249 before the bot completes data storage. The software in block 249 checks the basic financial system metadata to see if all fields have been extracted. If the software in block 249 finds no unmapped data fields, then the extracted, converted data are stored in the basic financial system table (160) and/or derivatives table (161). Alternatively, if there are fields that have not been extracted, then processing advances to a block 251. The software in block 251 prompts the user (20) via the metadata and conversion rules window (902) to provide metadata and conversion rules for each new field. The information regarding the new metadata and conversion rules is stored in the metadata mapping table (141) and conversion rules table (142) while the extracted, converted data are stored in the basic financial system table (160) and/or derivatives table (161). It is worth noting at this point that the activation and operation of bots where all the fields have been mapped are completed without interruption. Only bots with unmapped fields "wait" for user input before completing data storage. The new metadata and conversion rule information will be used the next time bots are initialized in accordance with the frequency established by the user (20). In either event, system processing passes on to software block 245.

The software in block 245 checks the bot date table (149) and deactivates any advanced financial system data bots with creation dates before the current system date and retrieves information from the system settings table (140), metadata mapping table (141) and conversion rules table (142). The software in block 245 then initializes data bots for each field in the metadata mapping table (141) that mapped to the Owner's Advanced Financial System Database (7) in accordance with the frequency specified by user (20) in the system settings table (140). Each data bot initialized by software block 245 will store its data in the advanced finance system database table (157).

After the software in block 245 initializes all the bots for the advanced finance system database, the bots extract and convert transaction and descriptive data in accordance with their preprogrammed instructions in accordance with the frequency specified by user (20) in the system settings table (140). As each bot extracts and converts data from the advanced financial system database (7), processing advances to a software block 249 before the bot completes data storage. The software in block 249 checks the advanced finance system database metadata to see if all fields have been extracted. If the software in block 249 finds no unmapped data fields, then the extracted, converted data are stored in the advanced finance system database table (157). Alternatively, if there are fields that haven't been extracted, then processing advances to a block 251. The software in block 251 prompts the user (20) via the metadata and conversion rules window (902) to provide metadata and conversion rules for each new field. The information regarding the new metadata and conversion rules is stored in the metadata mapping table (141) and conversion rules table (142) while the extracted, converted data are stored in the advanced finance system database table (157). It is worth noting at this point that the activation and operation of bots where all the fields have been mapped continues. Only bots with unmapped fields "wait" for user input before completing data storage. The new metadata and conversion rule information will be used the next time bots are initialized in accordance with the frequency established by the user (20). In either event, system processing then passes on to software block 246.

The software in block 246 checks the bot date table (149) and deactivates any asset management system data bots with creation dates before the current system date and retrieves information from the system settings table (140), metadata mapping table (141) and conversion rules table (142). The software in block 246 then initializes data bots for each field in the metadata mapping table (141) that mapped to an asset management system database (9) in accordance with the frequency specified by user (20) in the system settings table (140).

Extracting data from each asset management system ensures that the management of each soft asset is considered and prioritized within the overall financial models for the enterprise. Each data bot initialized by software block 246 will store its data in the asset system table (159).

After the software in block 246 initializes bots for all asset management system databases, the bots extract and convert transaction and descriptive data in accordance with their preprogrammed instructions in accordance with the frequency specified by user (20) in the system settings table (140). As each bot extracts and converts data from the asset management system databases (9), processing advances to a software block 249 before the bot completes data storage. The software in block 249 checks the metadata for the asset management system databases to see if all fields have been extracted. If the software in block 249 finds no unmapped data fields, then the extracted, converted data are stored in the asset system table (159). Alternatively, if there are fields that haven't been extracted, then processing advances to a block 251. The software in block 251 prompts the user (20) via the metadata and conversion rules window (902) to provide metadata and conversion rules for each new field. The information regarding the new metadata and conversion rules is stored in the metadata mapping table (141) and conversion rules table (142) while the extracted, converted data are stored in the asset system table (159). It is worth noting at this point that the activation and operation of bots where all the fields have been mapped continues. Only bots with unmapped fields "wait" for user input before completing data storage. The new metadata and conversion rule information will be used the next time bots are initialized in accordance with the frequency established by the user (20). In either event, system processing then passes on to software block 247.

The software in block 247 checks the bot date table (149) and deactivates any operations system data bots with creation dates before the current system date and retrieves information from the system settings table (140), metadata mapping table (141) and conversion rules table (142). The software in block 247 then initializes data bots for each field in the metadata mapping table (141) that mapped to the operations system database (8) in accordance with the frequency specified by user (20) in the system settings table (140). Each data bot initialized by software block 248 will store its data in the operation systems table (171).

After the software in block 247 initializes all the bots for the operation management system database, processing advances to a block 248. In block 248, the bots extract and convert transaction and descriptive data from the operations system database (8) in accordance with their preprogrammed instructions in accordance with the frequency specified by user (20) in the system settings table (140). As each bot extracts and converts data from the operations system database (8), processing advances to a software block 249 before the bot completes data storage. The software in block 249 checks the operation system metadata to see if all fields have been extracted. If the software in block 249 finds no unmapped data fields, then the extracted, converted data are stored in the operation systems table (171). Alternatively, if there are fields that have not been extracted, then processing advances to a block 251. The software in block 251 prompts the user (20) via the metadata and conversion rules window (902) to provide metadata and conversion rules for each new field. The information regarding the new metadata and conversion rules is stored in the metadata mapping table (141) and conversion rules table (142) while the extracted, converted data are stored in the operation systems table (171). It is worth noting at this point that the activation and operation of bots where all the fields have been mapped continues. Only bots with unmapped fields "wait" for user input before completing data storage. The new metadata and conversion rule information will be used the next time bots are initialized in accordance with the frequency established by the user (20). In either event, system processing then passes on to a software block 342.

Please note: the source for the added material comprises FIG. 5A, FIG. 5B, FIG. 5C and pages 21 through 40 of cross referenced application 09/994,720. The same material can also be found in cross referenced patent application 09/994,739. The other amendments correct typos.

Please change the last paragraph that begins on page 16 of the June 5, 2007 Supplemental Amendment to read as shown below:

The software in block 346 checks the bot date table (149) and deactivates any market value indicator bots with creation dates before the current system date. The software in block 346 then initializes market value indicator bots in accordance with the frequency specified by the user (20) in the system settings table (140). The bot retrieves the information from the system settings table (140), the metadata mapping table (141) and the element/external factor definition table (162) before saving the resulting information in the value and risk system database (45) ~~application database (50)~~.

Please change the third and fourth paragraphs that begin on page 17 of the June 5, 2007 Supplemental Amendment to read as shown below:

The software in block 347 checks the bot date table (149) and deactivates any temporal clustering bots with creation dates before the current system date. The software in block 347 then initializes a bot in accordance with the frequency specified by the user (20) in the system settings table (140). The bot retrieves information from the system settings table (140), the metadata mapping table (141) and the external database table (165) as required and define regimes for the enterprise market value before saving the resulting cluster information in the value and risk system database (45) ~~application database (50)~~.

Bots are independent components of the application that have specific tasks to perform. In the case of temporal clustering bots, their primary task is to segment the market price data by enterprise using the market value indicator selected by the bot in block 346 into distinct time regimes that share similar characteristics. The temporal clustering bot assigns a unique identification (id) number to each "regime" it identifies and stores the unique id numbers in the cluster id table ~~(157)~~ (155). Every time period with data are assigned to one of the regimes. The cluster id for each regime is saved in the data record for each element variable and factor variable in the table where it resides by enterprise. If there are enterprises in the organization that don't have market sentiment calculations, then the time regimes from the primary enterprise specified by the user in the system settings table (140) are used in labeling the data for the other enterprises. After the regimes are identified, the element and factor variables for each enterprise are segmented into a number of regimes less than or equal to the maximum specified by the user (20) in the system settings table (140). The time periods are segmented for each enterprise with a market value using a competitive regression algorithm that identifies an overall, global model before splitting the data and creating new models for the data in each partition. If the error from the two models is greater than the error from the global model, then there is only one regime in the data. Alternatively, if the two models produce lower error than the global model, then a third model is created. If the error from three models is lower than from two models then a fourth model is added. The process continues until adding a new model does not improve accuracy. Other temporal clustering algorithms may be used to the same effect. Every temporal clustering bot contains the information shown in Table 16.

Please change the last paragraphs on page 18 of the June 5, 2007 Supplemental Amendment to read as shown below:

When bots in block 347 have identified and stored regime assignments for all time periods with data by enterprise, processing advances to a software block 348 ~~375~~.

Please change the first and second paragraphs on page 19 of the June 5, 2007 Supplemental Amendment to read as shown below:

The software in block 348 checks the bot date table (149) and deactivates any variable clustering bots with creation dates before the current system date. The software in block 348 then initializes bots as required for each element of value and external factor by enterprise. The bots: activate in accordance with the frequency specified by the user (20) in the system settings table (140), retrieve the information from the system settings table (140), the metadata mapping table (141) and the element/external factor definition table (162) as required and define segments for the element variables and factor variables before saving the resulting cluster information in the value and risk system database (45) ~~application database (50)~~.

Bots are independent components of the application that have specific tasks to perform. In the case of variable clustering bots, their primary task is to segment the element variables and factor variables into distinct clusters that share similar characteristics. The clustering bot assigns a unique id number to each "cluster" it identifies and stores the unique id numbers in the cluster id table ~~(157)~~ (155). Every item variable for every element of value is assigned to one of the unique clusters. The cluster id for each variable is saved in the data record for each variable in the table where it resides. In a similar fashion, every factor variable for every external factor is assigned to a unique cluster. The cluster id for each variable is saved in the data record for the factor variable. The item variables and factor variables are segmented into a number of clusters less than or equal to the maximum specified by the user (20) in the system settings table (140). The data are segmented using the "default" clustering algorithm the user (20) specified in the system settings table (140). The system of the present invention provides the user (20) with the choice of several clustering algorithms including: an unsupervised "Kohonen" neural network, neural network, decision tree, support vector method, K-nearest neighbor, expectation maximization (EM) and the segmental K-means algorithm. For algorithms that normally require the number of clusters to be specified, the bot will iterate the number of clusters until it finds the cleanest segmentation for the data. Every variable clustering bot contains the information shown in Table 17.

Please change the first paragraph that begins on page 22 (after Table 19) of the June 5, 2007 Supplemental Amendment to read as shown below:

After predictive model bots are initialized, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, the bots retrieve the required data from the appropriate table ~~in the application database (50)~~ and randomly partition the element or factor variables into a training set and a test set. The software in block 349 uses "bootstrapping" where the different training data sets are created by re-sampling with replacement from the original training set so data records may occur more than once. After the predictive model bots complete their training and testing, processing advances to a block 350.

Please change the last paragraph that begins on page 23 of the June 5, 2007 Supplemental Amendment to read as shown below:

The software in block 352 checks the bot date table (149) and deactivates any causal predictive model bots with creation dates before the current system date. The software in block 352 then retrieves the information from the system settings table (140), the metadata mapping table (141), the segment definition table (176), the element variables table (163) ~~(158)~~ and the factor variables table (167) as required to initialize causal predictive model bots for each element of value, sub-element of value and external factor in accordance with the frequency specified by the user (20) in the system settings table (140).

Please change the first paragraph that begins on page 24 of the June 5, 2007 Supplemental Amendment to read as shown below:

Bots are independent components of the application that have specific tasks to perform. In the case of causal predictive model bots, their primary task is to refine the element and factor variable selection to reflect only causal variables. (Note: these variables are summed together to value an element when they are interdependent). A series of causal predictive model bots are initialized at this stage because it is impossible to know in advance which causal predictive model will produce the "best" vector for the best fit variables from each model. The series for each model includes five causal predictive model bot types: Tetrad, MML, LaGrange, Bayesian and path analysis. The software in block 352 generates this series of causal predictive model bots for each set of variables stored in the element variables table (163) ~~(158)~~ and factor variables table (167) in the previous stage in processing. Every causal predictive model bot activated in this block contains the information shown in Table 21.

Please change the last paragraph that begins on page 24 of the June 5, 2007

Supplemental Amendment to read as shown below:

After the causal predictive model bots are initialized by the software in block 352, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information for each model and sub-divide the variables into two sets, one for training and one for testing. After the causal predictive model bots complete their processing for each model, the software in block 352 uses a model selection algorithm to identify the model that best fits the data for each element of value, sub-element of value and external factor being analyzed. For the system of the present invention, a cross validation algorithm is used for model selection. The software in block 352 saves the best fit causal factors in the vector table (179) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to a block 358.

Please change the last paragraph that begins on page 25 of the June 5, 2007 Supplemental Amendment to read as shown below:

If software in block 350 determines that clustering improves predictive model accuracy, then processing advances to block 353 as described previously. The software in block 353 uses a variable selection algorithm such as stepwise regression (other types of variable selection algorithms can be used) to combine the results from the predictive model bot analyses for each model, cluster and/or regime to determine the best set of variables for each model. The models having the smallest amount of error as measured by applying the mean squared error algorithm to the test data is given preference in determining the best set of variables. As a result of this processing, the best set of variables contains: the element variables and factor variables that correlate most strongly with changes in the components of value. The best set of variables will hereinafter be referred to as the "value drivers". Eliminating low correlation factors from the initial configuration of the vector creation algorithms increases the efficiency of the next stage of system processing. Other error algorithms alone or in combination may be substituted for the mean squared error algorithm. After the best set of variables have been selected and stored in the element variables table (163) ~~(158)~~ or the factor variables table (167) for all models at all levels by enterprise, the software in block 353 tests the independence of the value drivers at the enterprise, element, sub-element and external factor level before processing advances to a block 354.

Please change the first two paragraphs on page 26 of the June 5, 2007 Supplemental

Amendment to read as shown below:

The software in block 354 checks the bot date table (149) and deactivates any causal predictive model bots with creation dates before the current system date. The software in block 354 then retrieves the information from the system settings table (140), the metadata mapping table (141), the segment definition table (176), the element variables table (163) ~~(158)~~ and the factor variables table (167) as required to initialize causal predictive model bots for each element of value, sub-element of value and external factor at every level in accordance with the frequency specified by the user (20) in the system settings table (140).

Bots are independent components of the application that have specific tasks to perform. In the case of causal predictive model bots, their primary task is to refine the element and factor variable selection to reflect only causal variables. (Note: these variables are grouped together to represent a single element vector when they are dependent). In some cases it may be possible to skip the correlation step before selecting causal the item variables, factor variables, item performance indicators, factor performance indicators, composite variables and composite factors. A series of causal predictive model bots are initialized at this stage because it is impossible to know in advance which causal predictive model will produce the "best" vector for the best fit variables from each model. The series for each model includes four causal predictive model bot types: Tetrad, LaGrange, Bayesian and path analysis. The software in block 354 generates this series of causal predictive model bots for each set of variables stored in the element variables table (163) ~~(158)~~ in the previous stage in processing. Every causal predictive model bot activated in this block contains the information shown in Table 22.

Please change the first and second paragraphs that begins on page 27 (after Table 22) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the causal predictive model bots are initialized by the software in block 354, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information for each model and sub-divide the variables into two sets, one for training and one for testing. The same set of training data is used by each of the different types of bots for each model. After the causal predictive model bots complete their processing for each model, the software in block 354 uses a model selection algorithm to identify the model that best fits the data for each element, sub-element or external factor being analyzed by model and/or regime by enterprise. For the system of the present invention, a cross validation algorithm is used for model selection. The software in block 354 saves the best fit causal factors in the vector table (179) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to block 358. The software in block 358 tests the value drivers to see if there are "missing" value drivers that are influencing the results as well as testing to see if there are interactions (dependencies) across elements. If the software in block 358 does not detect any missing data or value driver interactions across elements, then system processing advances to a block 363. Alternatively, if missing data or value driver interactions across elements are detected by the software in block 358, then processing advances to a software block 361.

The software in block 361 prompts the user (20) via the structure revision window (908) ~~(710)~~ to adjust the specification(s) for the affected elements of value, sub-elements of value or external factors as required to minimize or eliminate the interaction. At this point the user (20) has the option of specifying that one or more elements of value, sub elements of value and/or external factors be combined for analysis purposes (element combinations and/or factor combinations) for each enterprise where there is interaction between elements and/or factors. The user (20) also has the option of specifying that the elements or external factors that are interacting will be valued by summing the impact of their value drivers. Finally, the user (20) can chose to re-assign a value driver to a new element of value to eliminate the inter-dependency. This is the preferred solution when the inter-dependent value driver is included in the going concern element of value. Elements and external factors that will be valued by summing their value drivers will not have vectors generated. After the input from the user (20) is saved in the system settings table (140), and the element/external factor definition table (162) before system processing advances to a software block 363. The software in block 363 checks the system settings table (140) and the element/external factor definition table (162) to see if there are any changes in structure. If there have been changes in the structure, then processing advances to a block 205 and the system processing described previously is repeated. Alternatively, if there are no changes in structure, then processing advances to a block 364.

Please change the first two paragraphs that begin on page 29 (after Table 23) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the industry rank bots are initialized by the software in block 364, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the item variables, item performance indicators, and composite variables ~~from the application database (50)~~ and sub-divides them into two sets, one for training and one for testing. After the industry rank bots develop and test their rankings, the software in block 364 saves the industry rankings in the vector table (179) by enterprise ~~in the application database (50)~~ and processing advances to a block 365. The industry rankings are item variables.

The software in block 365 checks the bot date table (149) and deactivates any vector generation bots with creation dates before the current system date. The software in block 365 then initializes bots for each element of value, sub-element of value and external factor for each enterprise in the organization. The bots activate in accordance with the frequency specified by the user (20) in the system settings table (140), retrieve the information from the system settings table (140), the metadata mapping table (141), the segment definition table (176) and the element variables table (163) ~~(158)~~ as required to initialize vector generation bots for each element of value and sub-element of value in accordance with the frequency specified by the user (20) in the system settings table (140).

Please change the first paragraph that begins on page 34 (after Table 27) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the option bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information as required to complete the option valuations. When they are used, industry option bots go on to allocate a percentage of the calculated value of industry options to the enterprise on the basis of causal element strength. After the value of the real option, contingent liability or allocated industry option is calculated the resulting values are then saved in the real option value table (173) in the value and risk system database (45) ~~application database (50)~~ by enterprise before processing advances to a block 369.

Please change the first two paragraphs that begin on page 35 (after Table 28) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the cash flow bots are initialized, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated the bots, retrieve the forecast data for each enterprise from the advanced finance system table (157) and then calculate a steady state cash flow forecast by enterprise. The resulting values by period for each enterprise are then stored in the cash flow table (158) ~~(161)~~ in the value and risk system database (45) ~~application database (50)~~ before processing advances to a block 371.

The software in block 371 uses the cash flow by period data from the cash flow table (158) ~~(161)~~ and the calculated requirement for working capital to calculate the value of excess financial assets for every time period by enterprise and stores the results of the calculation in the financial forecasts table (168) in the application database before processing advances to a block 372.

Please change the last paragraph that begins on page 36 (after Table 29) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the software in block 372 initializes the financial value bots, the bots activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and sub-divide the data into two sets, one for training and one for testing. The same set of training data is used by each of the different types of bots for each model. After the financial bots complete their processing, the software in block 372 ~~369~~ saves the calculated value contributions by element or external factor for derivatives in the derivatives table (161) by enterprise. The calculated value contributions by element or external factor for excess financial assets are then saved in the financial forecasts table (168) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to a block 373.

Please change the first paragraph that begins on page 38 (after Table 30) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the element life bots are initialized, they are activated in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information for each element and sub-element of value from the element/external factor definition table (162) as required to complete the estimate of element life. The resulting values are then saved in the element/external factor definition table (162) by enterprise in the value and risk system database (45) ~~application database (50)~~ before processing advances to a block 374.

Please change the first paragraph that begins on page 39 (after Table 31) of the June 5,

2007 Supplemental Amendment to read as shown below:

After the calculation of capitalized value of every component and sub-component of value is complete, the results are stored in the segment definition table (176) by enterprise in the value and risk system database (45) ~~application database (50)~~. Every component capitalization bot contains the information shown in Table 32.

Please change the second paragraph that begins on page 39 (after Table 32) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the component capitalization bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information for each component and sub-component of value from the advanced finance system table (157) and the segment definition table (176) as required to calculate the capitalized value of each component for each enterprise in the organization. The resulting values are then saved in the segment definition table (176) in the value and risk system database (45) ~~application database (50)~~ by enterprise before processing advances to a block 376.

Please change the first and second paragraphs that begin on page 42 (after Table 35) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the current operation bots are initialized by the software in block 376 they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information and complete the valuation for the segment being analyzed. As described previously, the resulting values are then saved in the element/external factor definition table (162) ~~in the application database (50)~~ by enterprise before processing advances to a block 377.

The software in block 377 checks the bot date table (149) and deactivates any residual bots with creation dates before the current system date. The software in block 377 ~~350~~ then retrieves the information from the system settings table (140), the metadata mapping table (141) and the element/external factor definition table (162) as required to initialize residual bots for the each enterprise in the organization.

Please change the first paragraph that begins on page 43 (after Table 37) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the residual bots are initialized they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information as required to complete the residual calculation for each enterprise. After the calculation is complete, the resulting values are then saved in the element/external factor definition table (162) by enterprise in the value and risk system database (45) ~~application database (50)~~ before processing advances to a software block 378.

Please change the third paragraph that begins on page 44 (after Table 39) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the sentiment calculation bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information from the system settings table (140), the external database table (165), the element/external factor definition table (162), the segment definition table (176), the real option value table (173), the derivatives table (161) and the financial forecasts table (168) as required to complete the sentiment calculation for each enterprise and the organization. After the calculation is complete, the resulting values are then saved in the enterprise sentiment table (164) in the value and risk system database (45) ~~application database (50)~~ before processing advances to a block 380.

Please change the first paragraph that begins on page 46 (after Table 41) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the sentiment analysis bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information from the system settings table (140), the metadata mapping table (141), the industry ranking table (170), the element/external factor definition table (162), the segment definition table (176), the real option value table (173), the enterprise sentiment table (164), the derivatives table (161) and the financial forecasts table (168) as required to analyze sentiment. The resulting breakdown of sentiment is then saved in the enterprise sentiment table (164) by enterprise in the value and risk system database (45) ~~application database (50)~~. Sentiment at the organization level is calculated by adding together the sentiment calculations for all the enterprises in the organization. The results of this calculation are also saved in the enterprise sentiment table (164) ~~in the application database (50)~~ before processing advances to a software block 383 where the risk analysis for the organization is started.

Please change the first and second paragraphs that begin on page 49 (after Table 44) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the extreme value bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and determine the extreme value range for each value driver or external factor. The bot saves the extreme values for each causal value driver and external factor in the statistics table (178) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to a block 387.

The software in block 387 checks the bot date table (149) and deactivates any forecast bots with creation dates before the current system date. The software in block 387 ~~386~~ then retrieves the information from the system settings table (140), the external database table (165), the advanced finance system table (157), the element/external factor definition table (162), the element variables table (163), the financial forecast~~s~~ table (168) and the factor variables table (167) as required to initialize forecast bots in accordance with the frequency specified by the user (20) in the system settings table (140).

Please change the first paragraph that begins on page 50 (after Table 45) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the forecast bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and determine if any forecasts need to be changed to bring them in line with the market data on future values. The bot saves the updated forecasts in the appropriate tables in the value and risk system database (45) ~~application database (50)~~ by enterprise and processing advances to a block 388.

Please change the first and third paragraphs that begin on page 51 (after Table 46) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the scenario bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and develop a variety of scenarios as described previously. After the scenario bots complete their calculations, they save the resulting scenarios in the scenarios table (175) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to a block 389.

Bots are independent components of the application that have specific tasks to perform. In the case of simulation bots, their primary task is to run three different types of simulations for the enterprise. The simulation bots run simulations of organizational financial performance and valuation using: the two types of scenarios generated by the scenario bots – normal and extreme, they also run an unconstrained genetic algorithm simulation that evolves to the most negative value. In addition to examining the economic factors that were identified in the previous analysis, the bots simulate the impact of event risks like fire, earthquakes, floods and other weather-related phenomena that are largely un-correlated with the economic scenarios. Event risks are as the name implies events that may have adverse financial impacts. They generally have a range of costs associated with each occurrence. For example, every time someone slips and falls in the factory it costs $2,367 for medical bills and lost time. The information on frequency and cost associated with these events is typically found in risk management systems. However, ~~as discussed previously,~~ external databases ~~(25)~~ may also contain information that is useful in evaluating the likelihood and potential damage associated with these risks. Event risks can also be used to project the risk associated with competitor actions, government legislation and market changes. Every simulation bot activated in this block contains the information shown in Table 47.

Please change the first and second paragraphs that begins on page 52 (after Table 47) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the simulation bots are initialized, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). Once activated, they retrieve the required information and simulate the financial performance and value impact of the different scenarios on each segment of value by enterprise. After the simulation bots complete their calculations, the resulting risk forecasts are saved in the simulations table (177) and the xml summary table (166) by enterprise in the value and risk system database (45) ~~application database (50)~~ and processing advances to a block 392.

The software in block 392 checks the system settings table (140) in the application database (50) to determine if the current calculation is a new calculation or a structure change. If the calculation is not a new calculation or a structure change, then processing advances to a software block 402 ~~502~~. Alternatively, if the calculation is new or a structure change, then processing advances to a software block 393.

Please change the first paragraph that begins on page 53 of the June 5, 2007 Supplemental Amendment to read as shown below:

The software in block 393 continually runs an analysis to define the optimal risk reduction strategy for the normal and extreme scenarios for each enterprise in the organization. It starts this process by retrieving data from the system settings table (140), the operation systems table (171), the external database table (165), the advanced finance system table (157), the element/external factor definition table (162), the statistics table (178), the scenarios table (175) and the risk reduction activity/product table (174) by enterprise. The software in the block determines the optimal mix of risk reduction products (derivative purchase, insurance purchase, etc.) and risk reduction activities (reducing credit limits for certain customers, shifting production from high risk to lower risk countries, etc.) for the company under each scenario given the confidence interval established by the user (20) in the system settings table (140) using a linear programming optimization algorithm. A multi criteria optimization is also run at this stage to determine the best mix for reducing risk under combined normal and extreme scenarios. Other optimization algorithms can be used at this point to achieve the same result. In any event, the resulting product and activity mix for each set of scenarios and the combined analysis is saved in the optimal mix table (172) and the xml summary table (166) in the value and risk system database (45) ~~application database (50)~~ by enterprise and the revised simulations are saved in the simulations table (177) by enterprise before processing passes to a software block 394 ~~392~~. The shadow prices from these optimizations are also stored in the risk reduction activity/product table (174) and the xml summary table (166) by enterprise for use in identifying new risk reduction products that the company may wish to purchase and/or new risk reduction activities the company may wish to develop. After the results of this optimization are stored in the application database (50) by enterprise, processing advances to a software block 394.

Please change the first and second paragraphs that begin on page 54 (after Table 48) of the June 5, 2007 Supplemental Amendment to read as shown below:

After the software in block 394 initializes the value impact bots, they activate in accordance with the frequency specified by the user (20) in the system settings table (140). After being activated, the bots retrieve information as required to revise the simulations of enterprise performance and determine the risk reduction impact of each product on each simulation. The resulting forecast of value impacts are then saved in the the risk reduction activity/product table (174) by enterprise as appropriate in the value and risk system database (45) ~~application database (50)~~ before processing advances to a block 395.

The software in block 395 continually calculates the maximum enterprise value for each of the minimum risk strategies (normal, extreme and combined scenarios) defined in the previous section. The software in the block starts this process by retrieving data from the system settings table (140), the operation systems table (171), the external database table (165), the advanced finance system table (157), the element/external factor definition table (162), the risk reduction activity/product table (174), the statistics table (178), the scenarios table (175), the financial forecasts table (168), the factor variables table (167) and the analysis definition table (156) ~~(158)~~ as required to define and initialize a probabilistic simulation model for each scenario. The preferred embodiment of the probabilistic simulation model is a Markov Chain Monte Carlo model, however, other simulation models can be used with similar results. The model for each risk scenario is optimized using an optimization algorithm to identify the maximum enterprise value given the scenario risk profile. After the point of maximum value and minimum risk is identified for each scenario, the enterprise risk levels are increased and reduced in small increments and the optimization process is repeated until the efficient frontier for each scenario has been defined. The baseline efficient frontier is based on the scenario that combined normal and extreme risk scenarios, however the results of all 3 sets of calculations (normal, extreme and combined) are saved in the reports table (145) ~~(164)~~ before processing advances to a block 257 ~~247~~.

Please change the paragraph that begins on line 7 of page 30 in the specification to read as shown below:

Processing in this portion of the application begins in software block 402. The software in block 402 retrieves information from the process value table (151) as required to display the optimal mix of process features and feature options from the owners frame. The optimal mix for other frames can also be displayed at this time. The software in block 402 then prompts the user (20) via the analysis definition window ~~(908)~~ (905) to optionally edit the optimal mix that was displayed and/or to suggest other changes in the optimal mix. Any input regarding a change to the optimal mix is saved in the analysis definition table (156) before processing advances to a software block 403. The users input regarding changes in the optimal mix could also be forwarded to a simulation program at this point to determine if the user (20) specified changes had any material affect on the external factor consumption by the process.

Please change the paragraph that begins on line 17 of page 31 in the specification to read as shown below:

The software in block 404 retrieves the feature mix selected for transmission to the process management system database (30) from the process value table (151) and transmits it via a network (25) before advancing to a software block 405. The transmission of information by the software in block 404 could use the information developed in the prior stages of processing to activate bots to communicate the desired changes to those operating the relevant elements of value and report back as appropriate regarding progress toward implementing the new feature set. In any event, the software in block 405 checks the reports tables ~~(155)~~ (145) to determine if any reports have been designated for printing. If reports have been designated for printing, then processing advances to a block 406 where the software in the block prepares and sends the designated reports to the printer (118). After the reports have been sent to the printer (118), processing advances to a software block 409. Alternatively, if the software in block 405 determines that no additional reports have been designated for printing, then processing advances to block 409.